

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Certificate of Correction Branch, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on

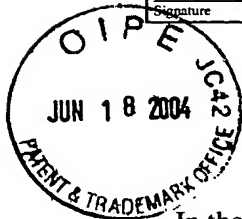
June 16, 2004

DONITA KONRAD

Name

Donita Konrad

Signature



P&G Case 8774

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of :
Shaffiq Amin Jaffer et al. : Confirmation No. 4115
Serial No. 10/035,720 : U.S. Patent No. 6,743,006 B2
Filed November 9, 2001 : Issued Jun. 1, 2004

For Die For Extruding Flowable Materials And Having A Static Mixer Therein

REQUEST FOR CERTIFICATE OF CORRECTION

UNDER 37 C.F.R. 1.322

Certificate
JUN 24 2004
of Correction

Certificate of Correction Branch
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

It is requested that the attached Certificate of Correction be issued under 37 CFR 1.322 for the above-identified patent. The mistakes are apparently due to Patent Office printing errors.

Title Page

Under "Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 154 days.", please insert "This patent is subject to a terminal disclaimer." A copy of the terminal disclaimer filed by Applicants on October 1, 2003 is attached hereto.

Column 3

Line 50, please delete "comp" and insert therefor -- come --. The correct version is shown on page 2 of the Amendment After 1st Office Action filed by Applicants on October 1, 2003, a copy of which is attached hereto.

Line 53, after the word "parallelogram", please insert a comma, -- , --. The correct version is shown on page 2 of the attached Amendment After 1st Office Action filed by Applicants on October 1, 2003.

Line 57, please delete the comma "," after "6,550,960". The correct version is shown on page 2 of the attached Amendment After 1st Office Action filed by Applicants on October 1, 2003.

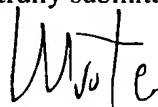
JUN 24 2004

Column 10

Line 22, please delete "stalk" and insert therefor -- static --. The correct version is shown on page 6 of the attached Amendment After 1st Office Action filed by Applicants on October 1, 2003 (the original Claim 19 is now Claim 18 in the issued patent).

Correction of these mistakes is believed necessary to avoid ambiguity with respect to the patentees' disclosure and claims.

Respectfully submitted,



Larry L. Huston
Attorney for Applicant(s)
Registration No. 32,994
(513) 634-9358

C. 115, 2004

Customer No. 27752

Appl. No. 10/035,720
Atty. Docket No. 8774
Amdt. dated October 1, 2003
Reply to Office Action of 07/03/2003
Customer No. 27752

Certification of Facsimile Transmission

I hereby certify that this correspondence is being facsimile transmitted to Examiner Joseph S. Leyson at 703/872-9310 at the Commissioner for Patents in the US Patent and Trademark Office on OCTOBER 1, 2003

DONITA KONRAD

Name

Donita Konrad

Signature



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 10/035,720
Applicant(s) : Shaffiq Amin Jaffer et al.
Filed : November 9, 2001
Title : Die For Extruding Flowable Materials And Having A Static Mixer Therein
TC/A.U. : 1722
Examiner : Joseph S. Leyson
Conf. No. : 4115
Docket No. : 8774
Customer No. : 27752

AMENDMENT AFTER 1ST OFFICE ACTION UNDER 37 CFR §1.111(c)

Mail Stop Non-Fee Amendment

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY REMARKS

In response to the Office Action of July 3, 2003, please amend the above-identified application as follows, consider the following remarks and reconsider the application.

Please amend the above-identified application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims begin on page 3 of this paper.

Remarks begin on page 7 of this paper.

AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

Please replace the paragraph beginning at page 5, line 17, with the following amended paragraph:

“The surface properties of the elements are chosen such that at least one phase of the extruded material preferentially wets this surface. The elements may be constructed of or coated with steel, aluminum, TEFLON™, polypropylene, etc. The ends of the bar come to a common intersection, which may be flat, rounded, or have a sharp edge. The bars may have a particular cross-section, such as triangular, curved, parallelogram, drop-shaped or elliptical. The static mixer 20 may be made according to the teachings of commonly assigned U.S. application serial no. 09/911774 filed Jul. 24, 2001 in the names of Catalfamo et al., now U.S. 6,550,960 B2, and incorporated herein by reference.”

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A die for extruding flowable material therethrough in a longitudinal direction, said die having a die inlet for admitting flowable material and a die outlet for expelling flowable material, said die inlet and die outlet being oppositely disposed on a longitudinal axis, said die outlet having a cross sectional area defining a die outlet plane having a major axis and a minor axis orthogonal thereto, said major axis being greater than or equal to minor axis, said die having a cavity connecting said die inlet and said die outlet, said cavity having a plurality of cross sections perpendicular to said longitudinal axis, said cavity having a static mixer therein, said static mixer having openings therethrough oriented substantially at an angle relative to said longitudinal direction, filling said cavity at a cross section, said static mixer causing flowable material to flow in a first direction having a component parallel to said major axis of said die outlet plane and later in a second direction having a component parallel to said minor axis of said die outlet plane as said flowable material is within said cavity.
2. (Currently amended) A die for extruding flowable material therethrough in a longitudinal direction, said die having a die inlet for admitting flowable material and a die outlet for expelling flowable material, said die inlet and die outlet being oppositely disposed on a longitudinal axis, said die outlet having a cross sectional area defining a die outlet plane having a major axis and a minor axis orthogonal thereto, said major axis being greater than or equal to minor axis, said die having a cavity connecting said die inlet and said die outlet, said cavity having a plurality of cross sections perpendicular to said longitudinal axis, said cavity having a plurality of static mixers therein, said plurality of static mixers being disposed in series between said die inlet and said die outlet whereby at least a portion of said flowable material passes through two or more of said static mixers of said plurality, one said static mixer comprising a stage of bars imparting flow to said flowable material in a first direction relative to said longitudinal direction, and a second static mixer of said plurality of static mixers comprising bars imparting flow to said flowable material in a second direction relative to said longitudinal axis, said first direction and said second direction defining an included angle therebetween of at least 45 degrees, at least one said static mixer filling said cavity

at a cross section imparting bilateral flow to flowable material as said flowable material is within said cavity and passing through said static mixer.

3. (Original) A die according to claim 1 wherein said static mixer has a static mixer inlet defining a static mixer inlet plane and a static mixer outlet defining a static mixer outlet plane, said static mixer inlet plane and said static mixer outlet plane each being flat and mutually parallel.
4. (Original) A die according to claim 3 wherein said die outlet plane and said static mixer outlet plane are mutually parallel.
5. (Original) A die according to claim 4 wherein said static mixer outlet plane and said die outlet plane are coincident.
6. (Original) A die according to claim 1 having a cross direction orthogonal to said longitudinal direction, wherein said static mixer has a first surface area to void volume ratio coincident said longitudinal axis and a second surface area to void volume ratio at a position spaced from said longitudinal axis in the cross direction, said first ratio being different than said second ratio.
7. (Original) A die according to claim 1 further comprising a plurality of auxiliary inlets for admitting material or admitting energy to said cavity of said die.
8. (Original) A die according to claim 2 further comprising a plurality of auxiliary inlets for admitting material or admitting energy to said cavity of said die.
9. (Original) A die according to claim 2 wherein said first static mixer has a first length and said second static mixer has a second length, said first length and said second length being taken in said longitudinal direction, said first length being greater than said second length.
10. (Original) A die according to claim 9 having a first static mixer with a first surface area to void volume ratio and a second static mixer with a second surface area to void volume ratio said first ratio being greater than said second ratio.

11. (Original) A die according to claim 2 further comprising a plurality of auxiliary inlets for admitting material, energy or both to said cavity of said die, said auxiliary inlets being intermediate said first static mixer and said second static mixer.
12. (Original) A die according to claim 11 further comprising a plurality of inlet tubes, said inlet tubes penetrating said die cavity for admitting material or energy to said die cavity.
13. (Original) A die according to claim 12 wherein a plurality of inlet tubes are disposed in at least one said static mixer.
14. (Original) A die according to claim 2 wherein at least one said static mixer comprises a plurality of hollow bars, said bars admitting material or energy to said cavity of said die.
15. (Original) A die according to claim 2 wherein one said static mixer is substantially parallel to said longitudinal direction.
16. (Original) A die according to claim 15 having a longitudinal centerline, and comprising at least a first static mixer disposed on a first side of said longitudinal centerline and at least a second static mixer disposed on a second side of said longitudinal centerline, said first static mixer and said second static mixer not intercepting said longitudinal centerline.
17. (Original) A die according to claim 15 wherein said static mixer substantially parallel to said longitudinal direction intercepts a static mixer substantially perpendicular to said longitudinal direction.
18. (Currently amended) A die according to claim 17 having a cross direction perpendicular to said longitudinal direction and a width taken in said cross direction, wherein said static mixer substantially perpendicular to said longitudinal direction extends the width of said die ~~at a position coincident said static mixer.~~
19. (Currently amended) A die for extruding flowable material therethrough in a longitudinal direction, said die having a die inlet for admitting flowable material and a

die outlet for expelling flowable material, said die inlet and die outlet being oppositely disposed on a longitudinal axis, said die outlet having a cross sectional area defining a die outlet plane having a major axis and a minor axis orthogonal thereto, said major axis being greater than or equal to minor axis, said die having a cavity connecting said die inlet and said die outlet, said cavity having a static mixer therein, said static mixer having a plurality of bars for directing the flow of material in said die cavity, at least one said bar for admitting ~~material~~, energy ~~or both~~ to said cavity of said die.

20. (Original) A die according to claim 19 wherein said bar admits energy to said cavity of said die, said bar having a window substantially transparent to the transmission of energy therethrough.

REMARKS

Claim 18 is rejected under 35 USC 112, second paragraph, as allegedly indefinite for failure to specify which said static mixer is recited at the end of the claim. Applicants respectfully thought that the static mixer at issue was the recited static mixer extending substantially perpendicular to the longitudinal direction. However, appropriate correction has been made in accordance with the Examiner's suggestion. Applicants gratefully acknowledge the Examiner's suggestion of how to resolve and overcome this rejection.

Claim 19 is rejected under 35 USC 102(b) as anticipated by Hill et al. (2,803,041). Hill et al. teaches an injection block 19 having cylindrical injection passages 24 which terminate at injection tips 26. Some of the injection tips extend into passageway 22. The injection passages receive material 54. Claim 19, as amended hereunder, requires a die having a static mixer disposed therein. The static mixer is comprised of a plurality of bars which admit energy into the cavity of the die. This arrangement provides the benefit that the energy may be used to initiate curing of material in the die during the extrusion process, as noted in the specification (10:13-20). Such an arrangement is not taught by Hill et al., nor are the benefits achievable from the teachings of Hill et al. Accordingly, Applicants respectfully submit that Claim 19 is neither anticipated nor rendered obvious by Hill et al. The Examiner is respectfully requested to reconsider and allow Claims 19-20.

Claims 1-4, 6, 9, 10, 15, 17 and 18 are rejected under 35 USC 103(a) as unpatentable over Kessler (4,478,516). Kessler teaches a forming apparatus having plates 32 with inlets 44, 54 therethrough. The inlets open to converging or diverging passages 40, 50, respectively.

Claim 1 is amended to specify the static mixer causes flowable material to separately flow in a first direction having a component parallel to the major axis and in a second direction of a component parallel to the minor axis. Basis is found in commonly assigned U.S. Application Ser. No. 09/911,774, filed June 24, 2001 and incorporated by reference into the present specification (5:21-24). This application issued April 22, 2003 as U.S. Pat. No. 6,550,960 B2. Basis for this portion of the amendment is found therein (4:33-56, Figs. 1-2).

Claim 2, as amended hereunder, requires a plurality of static mixers disposed in series. Basis is found in the instant specification (8:16-23). No new matter is added. Claim 2 is further amended to require the first static mixer impart flow in the first direction, and a second static mixer impart flow in a second direction, the directions defining an included angle of at least 45 degrees therebetween relative to the flow direction. Basis is again found in commonly assigned

U.S. Application Ser. No. 09/911,774, filed June 24, 2001 and incorporated by reference into the instant specification (5:21-24), now U.S. Pat. No. 6,550,960. Basis for this portion of the amendment is found therein (4:33-56, Figs. 1-2).

The passages of Kessler '516 axially converge/diverge relative to the longitudinal direction of the passages. Such passages cannot provide for separate flow in a first direction and a second direction, as required by the instant claims. The two separate directions required by Claims 1-2, as amended, provide for greater mixing than is achievable in the Kessler '516 device having converging/diverging passages. Further, the instant claims allow for flexibility in separation of the stages which provide the bilateral mixing, and hence greater control over the mixing process. Such benefits are neither suggested by nor achievable with the Kessler device. Accordingly, Applicants respectfully request all claims rejected over Kessler be reconsidered and allowed with the amendments made hereunder.

Claims 7, 8 and 11 are rejected under 35 USC 103(a) over Kessler and further in view of Chen et al. (5,372,765). Chen et al. teaches an extrusion device for thermoplastic resin. The device has separate branch streams with static mixers 9, 37 therein. The static mixers are schematically shown to include three stages. Each stage is shown to impart flow in the same direction relative to the longitudinal direction. The static mixers are not in series as required by Claim 2. Combining Chen et al. with Kessler yields a thermoplastic extrusion device having the Kessler plates in place of the three-stage static mixers. This combination fails to teach either the static mixers disposed in series required by Claim 2 or the static mixers imparting separate bilateral flow patterns as required by Claim 1. Alternatively, the combination may be thought to yield the plastic extrusion apparatus having three static mixers in series, each static mixer having three stages imparting flow in the same direction relative to the longitudinal direction of material flow. Again, the claimed invention having separate flow directions does not result. Accordingly, the cited combination fails to teach or render obvious the invention and benefits of Claims 7, 8 and 11.

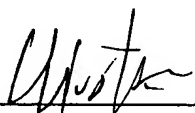
Claims 12, 13 and 16 are rejected under 35 USC 103(a) as unpatentable over Kessler in further view of Chen and Hill et al. Claim 14 is rejected under 35 USC 103(a) as unpatentable over Kessler et al. and in further view of Hill et al. As noted above, Hill et al. simply teaches the inlet tubes. Adding Hill et al. to the Kessler/Chen combinations fails to produce the claimed invention. Accordingly, the Examiner is respectfully requested to reconsider and withdraw any rejection based on such combinations.

Appl. No. 10/035,720
Atty. Docket No. 8774
Amdt. dated October 1, 2003
Reply to Office Action of 07/03/2003
Customer No. 27752

Claims 1-20 are provisionally rejected for obviousness-type double patenting over Claims 1-17 of copending Application Ser. No. 10/035,726 in view of Kessler '526. A terminal disclaimer is enclosed herewith to overcome this rejection.

All matters raised by the Office Action are believed to be addressed by the amendments and comments made hereunder. The Examiner is respectfully requested to enter the foregoing amendments and to reconsider and allow all claims remaining in the application.

Respectfully submitted,

By 
Larry L. Huston
Attorney for Applicant(s)
Registration No. 32,994
(513) 634-9358

October 1, 2003
Customer No. 27752

Certification of Facsimile Transmission	
I hereby certify that this correspondence is being facsimile transmitted to Examiner Joseph S. Leyson at 703/872-9310 at the Commissioner for Patents in the US Patent and Trademark Office on <u>October 1, 2003</u>	
Name <u>DONITA KONRAD</u>	
Signature <u>Donita Konrad</u>	

P&G Case 8774

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of	:	
Shaffiq Amin Jaffer et al.	:	Confirmation No. 4115
Serial No. 10/035,720	:	Group Art Unit 1722
Filed November 9, 2001	:	Examiner Joseph S. Leyson

For Die For Extruding Flowable Materials And Having A Static Mixer Therein

TERMINAL DISCLAIMER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Petitioner, The Procter & Gamble Company, is the owner of the entire right, title and interest in the above-identified application (the assignment recorded on March 12, 2002 at reel 12709, frame 326). Petitioner hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the above-identified application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. §154 to §156 and §173 as shortened by any terminal disclaimer filed prior to the grant of any patent granted on pending second Application Number 10/035,726, filed on November 9, 2001 (the assignment recorded on May 13, 2002 at reel 12682, frame 925). The evidentiary documents for the assignments have been reviewed, and petitioner certifies that to the best of petitioner's knowledge and belief, title is in the assignee to take this action. Petitioner hereby agrees that any patent so granted on the above-identified application shall be enforceable only for and during such period that it and any patent granted on the second application are commonly owned. This agreement runs with any patent granted on the above-identified application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, petitioner does not disclaim the terminal part of any patent granted on the above-identified application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. §154 to §156 and §173 of any patent granted on the second application, as shortened by any terminal disclaimer filed prior to the patent grant, in the event that any such granted patent: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. §1.321, has all claims cancelled by a

reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

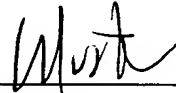
The undersigned is empowered to act on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Authorization is given to charge Deposit Account No. 16-2480 for the fee required under 37 C.F.R. §1.20 (d) of \$110.00 for submission of this Terminal Disclaimer. A duplicate copy of this correspondence is enclosed to facilitate charging of the fee.

Respectfully submitted,

By



Larry L. Huston
Attorney for Applicants
Registration No. 32,994
(513) 634-9358

October 1, 2003

Customer No. 27752

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

PATENT NO. : 6,743,006 B2

DATED : Jun. 1, 2004

INVENTOR(S) : Shaffiq Amin Jaffer et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title Page

Under "Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 154 days." should be inserted "This patent is subject to a terminal disclaimer."

Column 3

Line 50, delete "comp" and insert therefor -- come --.

Line 53, after the word "parallelogram", insert a comma, -- , --.

Line 57, delete the comma " ," after "6,550,960".

Column 10

Line 22, delete "stalk" and insert therefor -- static --.

MAILING ADDRESS OF SENDER:

PATENT NO. 6,743,006 B2

Customer No. 27752

No. of add'l. copies
@ 30¢ per page

⇒ _____

FORM PTO 1050 (REV. 3-82)
P&G Case: 8774

JUN 24 2004